PATENT CLAIMS

1. Apparatus for measuring and/or monitoring the flow of a medium (11) to be measured, flowing through a measuring tube (2) in the direction of the longitudinal axis (10) of the measuring tube (2), comprising: A magnet arrangement (12) which produces a magnetic field passing through the measuring tube (2) and running essentially transversely to the longitudinal axis (10) of the measuring tube (2); two measuring electrodes (3, 4) which are galvanically or capacitively coupled with the medium (11) to be measured and arranged in such a manner that a measurement voltage is induced in them, evoked by the medium (11) to be measured; an evaluation/control unit (7), which, on the basis of the measurement voltage induced in the measuring electrode (3; 4), or measuring electrodes (3, 4), provides information concerning the volume flow of the medium to be measured, in the measuring tube (2); wherein connecting lines (5, 6) or signal lines (15, 16) are provided, by way of which measurement signals are led between the measuring electrodes (3, 4) and the control/evaluation unit (7),
characterized in that
the signal lines (15, 16) are arranged essentially in a planar structure.

2. Apparatus as claimed in claim 1,
characterized in that
the signal lines (15, 16) are applied to a carrier material (27).

3. Apparatus as claimed in claim 1 or 2,
characterized in that
the carrier material (27) is flexible and
the planar structure comprises a flexprint (14).

4. Apparatus as claimed in claim 1 or 2,
characterized in that
the signal lines (15, 16) are arranged on a lateral surface (21) of a flexible carrier layer (27) and symmetrically to the longitudinal axis of the flexible

carrier layer (27), wherein the longitudinal axis (34) is arranged essentially parallel to the principle axis (35) of the magnetic field.

5. Apparatus as claimed in claim 2 or 4,
characterized in that
the signal lines (15, 16) are so arranged on the carrier material, or on the flexible carrier layer (27), as the case may be, that the area between the signal lines (15, 16) is minimal.

6. Apparatus as claimed in claim 1,
characterized in that
each magnet arrangement includes one pole shoe (12), wherein the pole shoe (12) is composed of a plurality of pole shoe lamellae (13).

7. Apparatus as claimed in claim 1 or 6,
characterized in that
the carrier material, or the flexible carrier layer (27), as the case may be, is integrated with the signal lines (15, 16) into one of the two pole shoes (12).

8. Apparatus as claimed in claim 1, 6 or 7,
characterized in that
the carrier material, or the flexible layer (27), on which the signal lines (15, 16) are provided, has, at least in a subsection, the form of a pole shoe lamella (13) and
the corresponding planar structure is joined into the pole shoe (12) in the place of the pole shoe lamella (13) arranged in the middle.

9. Apparatus as claimed in claim 1 or 8,
characterized in that
at least one essentially planar electronic component (29) is provided on the planar structure.

10. Apparatus as claimed in claim 1, 7 or 8,
characterized in that
a mechanical coding (31, 32) is provided on the carrier material or on the planar structure.

11. Arrangement for leading signal lines (15, 16) and/or connecting lines (5, 6) in a pole shoe (12) of a magnet arrangement, wherein the magnet arrangement preferably is a part of a magneto-inductive flow measuring device, comprising a plurality of planar layers (25, 26, 27, 28), wherein at least one of the layers (27) carries essentially planar signal lines (15, 16) and/or connecting lines (5, 6) and is inserted into the pole shoe (12) in place of at least one pole shoe lamella (13).

12. Apparatus as claimed in claim 11,

wherein the signal lines (15, 16) are applied onto at least one of the planar layers (27).

13. Apparatus as claimed in claim 10 or 11,
wherein the planar layers (25, 26, 27, 28) are flexible layers.